What is claimed:

1. A method for use in providing Internet service to an endpoint, the method comprising the steps of:

specifying routing information for an endpoint, wherein the routing information specifies primary and alternative Internet Protocol (IP) addresses; and

communicating data to the endpoint using the specified primary IP address except during periods of service interruption in which one of the alternative IP addresses are used.

2. The method of claim 1 wherein the communicating data step further comprises the steps of:

detecting the service interruption;

establishing an IP tunnel to the endpoint using one of the alternative IP addresses;

and

forwarding the data via the IP tunnel to the endpoint.

3. The method of claim 1 wherein the communicating data step further comprises the steps of:

receiving an IP packet that includes a destination field, the value of which matches a subnetwork address identifier within the primary IP address;

determining if a communications channel to the primary IP address is available;

if the communications channel is available, routing the received IP packet to the primary IP address; and

if the communications channel is not available, routing the received IP packet to one of the alternative IP addresses.

4. A method for use in providing Internet service to an endpoint via a primary communications channel, the method comprising the steps of:

storing a routing table comprising an first Internet Protocol (IP) address associated with routing data to an endpoint via the primary communications channel and a second IP address associated with routing data to the endpoint over a secondary communications channel; and

routing data to the endpoint as a function of the routing table such that during periods of service interruption on the primary communications channel data is routed to the endpoint via the secondary communications channel, whereas data is routed to the endpoint via the primary communications channel otherwise.

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1   5. The method of claim 4 wherein the routing data step further comprises the

2 steps of:

3   detecting the service interruption;

4   establishing an IP tunnel to the endpoint using the second IP address;

5   and

6   forwarding the data via the IP tunnel to the endpoint.

1   6. The method of claim 4 wherein the routing data step further comprises the

2 steps of:

3   receiving an IP packet that includes a destination field, the value of which matches

4 a subnetwork address identifier within the first IP address;

5   determining if the primary communications channel is available;

6   if the primary communications channel is available, routing the received IP packet

7 to the first IP address; and

8   if the primary communications channel is not available, routing the received IP

9 packet to the second IP address.

1   5ub   7. A method of communicating over a cable television (CATV) access network

2 having a cable modem termination system (CMTS) interface, the method comprising the

3 steps of:

4   establishing a connection between the CMTS and a distant cable modem (CM);

5   storing routing information associated with the connection, the routing information

6 including at least a CM identifier, an identity of an RF link on the CATV access network

7 over which the CMTS forwards data packets to the CM, and a tunnel interface identifier

8 over which the CMTS forwards data packets to the CM over a different network; and

9   communicating data packets to the CM by translating the CM identifier to either

10 the identified RF link or the tunnel interface identifier, wherein the tunnel is invoked in the

11 event of a CATV interface failure.

1   8. The method of claim 7 wherein CATV access network provides one-way, or

2 downstream, communications to the CM.

1   9. The method of claim 7 wherein CATV access network provides two-way

2 communications to the CM.

1   10. The method of claim 7 wherein the CM identifier over the CATV network is

2 logically derived from a CMTS subnetwork identifier of the CMTS.

1   11. The method of claim 7 wherein the CM identifier over the different network is

2   logically derived from an Internet Service Provider (ISP) subnetwork identifier of a

3   Network Access Server (NAS) of the ISP.
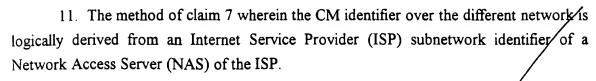
1   12. Apparatus for use in providing Internet service to an endpoint, the apparatus

2   comprising:

3   a device for (a) specifying routing information for an endpoint, wherein the routing

4   information specifies primary and alternative Internet Protocol (IP) addresses, and (b)

5   communicating data to the endpoint using the specified primary IP address except during

6   periods of service interruption in which one of the alternative IP addresses are used.

1   13. The apparatus of claim 12 wherein the device is a part of a cable television

2   network (CATV).

1   14. Apparatus for use in providing Internet service to an endpoint, the apparatus

2   comprising:

3   a device for routing data to the endpoint as a function of a routing table stored

4   therein such that during periods of service interruption on a primary communications

5   channel data is routed to the endpoint via a secondary communications channel, whereas

6   data is routed to the endpoint via the primary communications channel otherwise.

1   15. The apparatus of claim 14 wherein the device is a part of a cable television

2   network (CATV).

1   16. A system for use in providing Internet service, the system comprising:

2   a cable head-end router for providing Internet Protocol (IP) packets intended for

3   subsequent conveyance over a primary channel; and

4   a cable modem data termination system responsive to the provided IP packets for

5   routing the IP packets to an endpoint as a function of a routing table stored therein such

6   that during periods of service interruption on the primary communications channel the IP

7   packets are routed to the endpoint via a secondary communications channel, whereas the

8   IP packets are routed to the endpoint via the primary communications channel otherwise.

1   17. A system for use in providing Internet service, the system comprising:

2   a cable head-end router for providing Internet Protocol (IP) packets that include a

3   destination field having a value associated with a first IP address; and

4   a cable modem data termination system responsive to the provided IP packets for

5   communicating the IP packets to the endpoint using the first IP address except during

6   periods of service interruption in which an alternative IP address is used.

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